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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,467	04/12/2006	Shinichi Kaga	2006_0526A	3223

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EXAMINER

COX, ALEXIS K

ART UNIT	PAPER NUMBER
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3785

NOTIFICATION DATE	DELIVERY MODE
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10/27/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/575,467	Applicant(s) KAGA ET AL.	
	Examiner ALEXIS K. COX	Art Unit 3785	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 41-45 rejected under 35 U.S.C. 103 (a) as being unpatentable over Lee et al (US Patent No. 5,921,095) in view of Viegas (US Patent No. 6,062,030),

Art Unit: 3785

Linstromberg (US Patent No. 5,060,486), Goth et al (US Patent Application Publication No. 2003/0000232), and Astle et al (US Patent Application Publication No. 2003/0168389).

Regarding claim 41, Lee discloses a refrigerating storage cabinet comprising a heat insulating housing (5, see column 1 lines 42-45; 12, see column 4 lines 51-52 and column 5 lines 12-14) having a storage compartment (see figure 2); a refrigerating unit that includes a compressor (6, see column 4 line 35; see also column 1 line 29), and a condenser, expanding mechanism, and evaporator, as they are inherently present in the system of Lee et al. Lee further discloses the unit to be conformable to a plurality of refrigerating specifications (see column 6 lines 16-24), at least one being for refrigerating and one for freezing. Lee also discloses an identifying means (40, 31, see column 6 lines 4-16; see also figures 11 and 12) configured to identify the refrigerating specification (mode, examples given being refrigerating + refrigerating + freezing and freezing + refrigerating + refrigerating) of the heat storage compartment to which the refrigerating unit is detachably attached (14, 15, see column 5 lines 41-48) by providing an identification signal indicative of the identified refrigerating specification (see column 4 lines 11-15), a control unit (16, 17, see column 5 line 50; see also figure 6) for said refrigerating unit, the control unit being configured to select one of said plurality of refrigerating specifications based on said identification signal (31, see column 6 lines 29-31) and to control operation of said refrigerating unit in accordance with the selected one of said plurality of refrigerating specifications (see column 6 lines 4-24). The identifying means of Lee et al includes a detecting portion (microcontroller 16) provided

Art Unit: 3785

on one of the refrigerating unit or the heat insulating housing, and a detected portion (switches 40, see column 6 lines 4-15) provided on an other of the heat insulating housing or the refrigerating unit, wherein an interaction between the detecting portion and the detected portion determines the identification signal (see column 6 lines 4-15; see also figure 12), and the detecting and detected portions are arranged close together, and have an interaction therebetween as a result of mounting said refrigerating unit to said heat insulating housing, with the identification signal being based on the interaction; and the control unit has a data storage that stores the plurality of refrigerating characteristics associated with said plurality of refrigerating specifications, as this is an inherent feature of the microcontroller of Lee. It is noted that Lee et al does not explicitly disclose the use of a single set of materials for both freezer and refrigerator modules, although as Lee et al only discloses a single pattern of construction, material proportions and types are the only variants disclosed by Lee et al to physically distinguish between freezer and refrigerator modules. It is further noted that Lee et al does not explicitly state the use of a time-varying change mode of dropping of a physical amount with respect to refrigeration, the physical amount including an internal temperature of the heat insulating housing; more specifically, Lee et al does not explicitly perform pull-down cooling and control refrigeration according to the internal temperature monitored. The programming concept of pull-down cooling in a multi-compartmented refrigerated space is well known in the art, as is demonstrated by Viegas (see column 3 lines 23-29), and as such it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the pull-down cooling of

Art Unit: 3785

Viegas in the system of Lee et al in order to provide better temperature control within the refrigerator/freezer in question. Linstromberg explicitly discloses a single compartment which can be used as a refrigerator or freezer (see figure 2). As the only difference between the refrigerator and freezer compartments of Lee et al is materials, the varied selection of which was done to reduce construction costs, and it is well known as a common mechanical expedient to use the same materials to reduce construction costs by providing interchangeable parts and bulk discounts, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a single unit type for both refrigerator and freezer units in the system of Lee et al, as is disclosed by Linstromberg, in order to simplify assembly and therefore reduce labor costs.

It is further noted that the system of Lee, Viegas, and Linstromberg is not disclosed to have individual unit controllers on each subsection; indeed, Lee states that the usual expansion of a refrigeration system is more expensive because each additional unit requires an additional controller. However, the system of Lee was invented in 1997; it is well known that the price of microcomputer components reduces sharply over relatively short periods of time, such that a decade will mean that the same specifications on a component are available in a smaller size for much less money. Goth et al explicitly discloses the use of a sub-controller for each unit of a refrigeration system (24, see paragraph 18), which is in communication with a primary controller (64, see also paragraph 18). In view of the fact that the price of microcontrollers went down radically in the time between the inventions of Lee and Goth et al, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the individual

Art Unit: 3785

unit controllers of Goth et al in the system of Lee, Viegas, and Linstromberg in order to permit the separate functioning of each module, rather than permitting function of each unit solely when in combination with others.

It is further noted that the detector of Lee is not disclosed to trigger the signal by the movement of the detecting and detected portions relative to each other. Astle et al explicitly discloses the use of reed switches (see figures 14 and 15 and paragraphs [0030] and [0031]), the arrangement of which indicates to the controller of Astle what type of filter is present in the system, and the triggering of which is caused by the movement of the filter into position in the refrigerator. The triggering of the reed switches must happen because of the movement of the filter into place because that is the nature of reed switches; see also paragraph [0031] of Astle. As the systems of Astle and Lee both relate to identification of removable and limitedly interchangeable components in a system, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the reed switch detector and associated programming logic of Astle for the button or switch setting of Lee in order to simplify installation of units, as it would no longer require deliberate human intervention in the appropriate identification of units.

Regarding claim 43, Lee et al discloses an information recording section storing supplemental information (31, 16, see column 6 lines 29-31 and 16-24) and an information conveying means for reading and communicating the supplementary information to the control means, and the supplementary information includes at least one of a size of the heat insulating housing or a heat invasion amount characteristic, as

Art Unit: 3785

the temperature change of the interior space over time is a heat invasion amount characteristic (see column 6 lines 16-24).

Regarding claims 44 and 45, a pull down cooling characteristic is, as usually applied, one where faster or stronger cooling is applied when first starting a unit or when the temperature being controlled goes above an upper limit. This cooling is reduced or stopped at another threshold temperature or temperatures, such that the temperature is controlled in a range about the desired temperature. It is therefore disclosed by the systems of Lee et al and Viegas that the steps claimed in claim 37 be used in accordance with the specified refrigeration characteristic. Additionally, there is little point to calculating control characteristics without using them; as well as Lee discloses operation of the refrigerating storage cabinet according to the calculated characteristics (16, 17, see column 5 line 50, column 6 lines 16-24, and figure 6).

5. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US Patent No. 5,921,095), Viegas (US Patent No. 6,062,030), Linstromberg (US Patent No. 5,060,486), Goth et al (US Patent Application Publication No. 2003/0000232), and Astle et al (US Patent Application Publication No. 2003/0168389), in view of Valence et al (US Patent No. 5,600,966).

Regarding claim 42, it is noted that Lee et al, Linstromberg, Viegas, and Astle et al do not explicitly disclose the presence of a condensation-preventing heater with variable heating performance located about an opening of the heat insulating housing or a switching device provided to switch the variable heating performance of the heater to correspond to the appropriate one of the plurality of refrigerating specifications. Valence

Art Unit: 3785

et al discloses the presence of a condensation-preventing heater (46, see column 3 lines 38-43) with variable heating performance (46, 48, see column 4 lines 44-47) and located about an opening of the heat insulating housing, and the control unit of Lee et al (16, 17, see column 5 line 50; see also figure 6) is capable of controlling the heating element of Valence. Further, as the function and structure of Lee et al, Linstromberg, Viegas, and Valence et al are similar, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the condensation preventing heater of Valence et al in the system of Lee et al and Viegas to prevent excess condensation, as stated in column 3 line 43 of Valence et al.

Response to Arguments

6. Applicant's arguments filed 8/31/2010 have been fully considered but they are not persuasive. The majority of the arguments are moot in view of the new grounds of rejection. To the extent to which the arguments are still applicable, the response follows.

It is argued that the detecting and detected portions of Lee are located within the same structural element.

Figure 11 illustrates the refrigerating/freezing function selection unit for a cycle controller. Figure 11 is a wiring diagram in which there are 3 switches shown, one for each modular unit. If the switches, or detected portion, were not located in different structural elements, there would not be one switch per modular unit. Accordingly, this argument would be unpersuasive even if it were still applicable in view of the new grounds of rejection, which it is not.

There is also provided in the arguments an example of an embodiment, which has a pressure sensor for the detecting portion. However, the pressure sensor is not claimed; the claims, as presently written, are broad enough for any sensor which is triggered by one item being placed in sufficiently close proximity to another to constitute detecting/detected portions.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. As previously stated in the advisory action of 9/09/2010, Takeuchi et al (US Patent Application Publication No. 2004/0095369), Ooyabu (US Patent No. 5,709,094), and Fleischmann (US Patent No. 3,977,391) all disclose relevant pressure sensors or their applications. More specifically, Takeuchi et al and Fleischmann both disclose pressure sensors triggered by button pushes, while Ooyabu et al discloses a refrigerating system which uses the combination of pressure and temperature data to determine which refrigerant is in use in the system. Harwood et al (US Patent Application Publication No. 2005/0178128) discloses the use of a Hall Effect sensor to detect docking of parts with each other. Krause et al (US Patent Application Publication No. 2008/0060982) also discloses the use of reed switches to detect if and what is present in a filter slot.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXIS K. COX whose telephone number is (571)270-5530. The examiner can normally be reached on Monday through Thursday 9:30a.m. to 7:00p.m. EST.

Art Unit: 3785

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 571-272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AKC/

/J J Swann/

Supervisory Patent Examiner, Art Unit 3785